REPORT RESUMES

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A GUIDE FOR HEALTH TECHNOLOGY PROGRAM PLANNING.

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THIS GUIDE TO THE PREPARATION OF A 2-YEAR COLLEGE PROGRAM IN HEALTH TECHNOLOGY LISTS CERTAIN NECESSARY PRE-CONDITIONS. BEFORE THE COURSE CAN BE ESTABLISHED, THE ADMINISTRATION MUST (1) DEFINE THE SCOPE OF THE PROGRAM, (2) BE AWARE OF ACCEPTED STANDARDS FOR TECHNICIANS IN THE HEALTH FIELD, (3) NOTE THE POSSIBLE IMPACT OF THE PROGRAM ON THE COLLEGE'S EXISTING GOALS, (4) DISCOVER BY SURVEY THE PARTICULAR PROGRAM MOST NEEDED BY THE COMMUNITY, (5) BE SURE THE DEVELOPMENT OF THIS PROGRAM IS FEASIBLE, (6) DETERMINE THE RESOURCES NEEDED (FACULTY, EQUIPMENT, ETC.) AND SECURE THE MONEY FOR THEM, (7) DEVELOP THE CURRICULUM AS SPECIFICALLY AS POSSIBLE, AND (8) ESTABLISH PROCEDURES FOR CONSTANT EVALUATION OF THE PROGRAM. DURING THE PLANNING AND THROUGHOUT THE COURSE OF THE PROGRAM, THE ADMINISTRATION WILL RELY HEAVILY ON THE ADVICE OF HEALTH PRACTITIONER ASSOCIATIONS, INDIVIDUAL PROFESSIONALS IN THE COMMUNITY, AND, FOR CLINICAL TRAINING, ON LOCAL HEALTH FACILITIES AND THEIR STAFFS. (HH)

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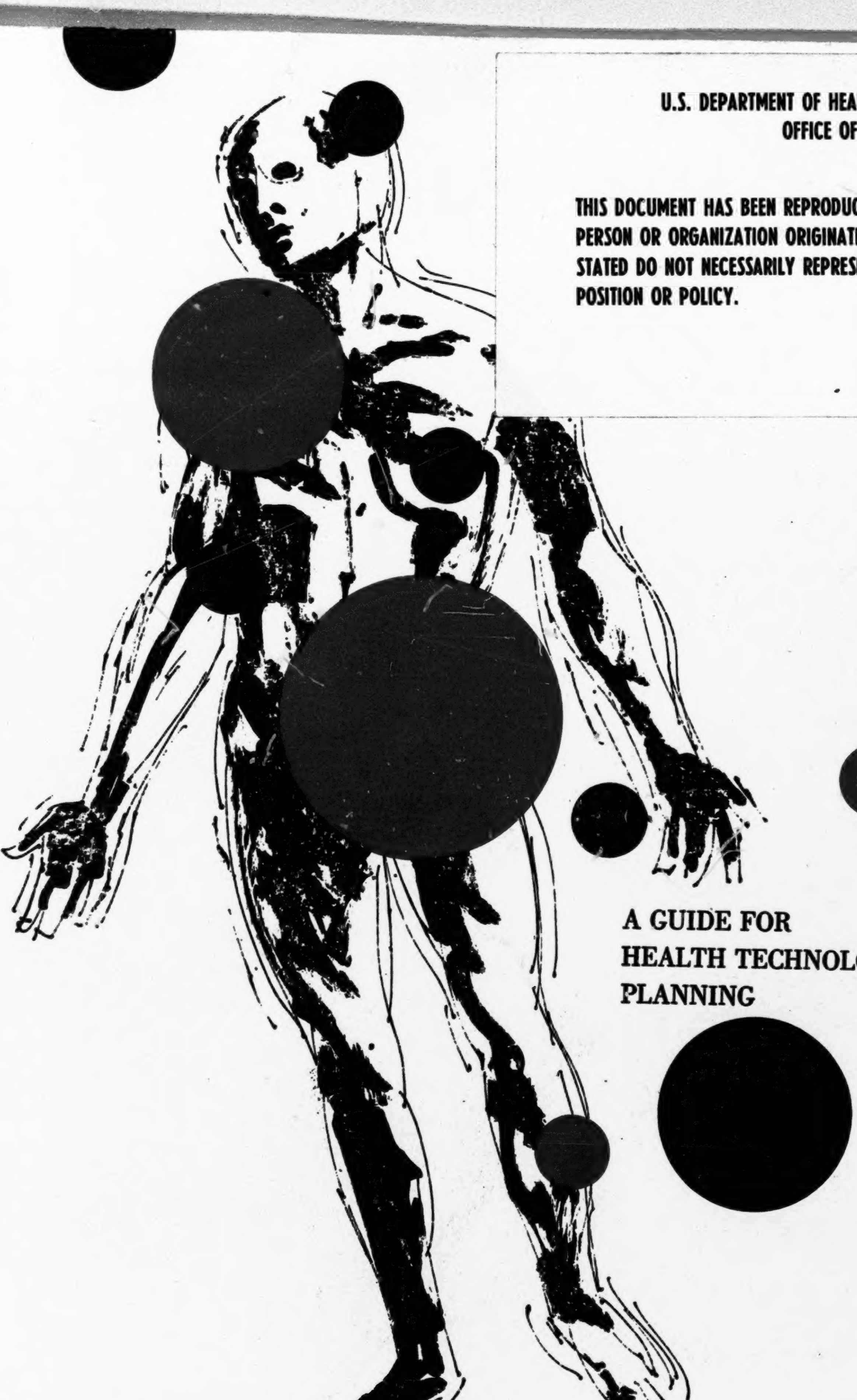

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INFORMATION

A GUIDE FOR
HEALTH TECHNOLOGY PROGRAM
PLANNING

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CONTENTS

Introduction 4
Foreword 6
Who Will Use This *Guide* 8
Overview of *Guide* 9

Section 1

Program Development in Health Technology Education 10
  Step One 10
  Step Two 13
  Step Three 17
  Step Four 18
  Step Five 21
  Step Six 25
  Step Seven 28
  Step Eight 30
  Review and Summary 32

Section 2

Collaborative Roles in Health Technology Education 35
  Checklists of Role Performance 39
Appendix A 42
Appendix B 43
Appendix C 47
Appendix D 49
Appendix E 50
Appendix F 52

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INTRODUCTION

There is abundant evidence that personnel shortages impede the operation of existing health care institutions. It is also clear that present health facilities are being called upon to provide increased health care services. Traditional sources of educational preparation for health careers have not been able to prepare the numbers needed to satisfy current demands; projected future demands for care would place an impossible burden on the professional schools, hospitals, and laboratories which have usually offered programs for the education of supportive health service workers.

Within the last two decades national commissions concerned with health goals of the nation have repeatedly called attention to two facts: (1) that the deepening of our knowledge of health care and increased demands for all types of health services will continue to create deficits of health professionals; (2) that the range of science and technology available to improve the accessibility and quality of care will call for the services of many different types of health workers. The health careers seen as most likely to extend professional resources are technical-level careers, requiring preparation beyond high school but less than the baccalaureate degree.

As extensions of professions in fields which serve the public these technical vocations demand the same attitudes and quality of performance required of health practitioners with the maximum formal education.

It was the search for a new educational resource to provide qualified technical assistance within health fields that led to the formation of an ad hoc *committee composed of representatives of the American Association of Junior Colleges and the National Health Council. In so doing, the National Health Council, an organization providing coordination and leadership for national organizations in the health field, reflected the concerns of many of its members. The American Association of Junior Colleges reflected the interest of colleges which were familiar with health manpower needs in their communities and at the same time aware of the career potential of the health field.*

The ad hoc *committee drew up a grant proposal to build and disseminate guidelines for the development of health technology programs in junior colleges. The Division of Adult and Vocational Research, Bureau of Research, Office of Education, U.S. Department of Health, Education, and Welfare, funded the work for a one-year period.*

The guidelines which follow constitute the report of the committee members appointed by the National Health Council or the American Association of Junior Colleges. The committee was assisted by a staff member from each organization and a full-time project director.

Peter G. Meek	Edmund J. Gleazer, Jr.
Executive Director	*Executive Director*
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FOREWORD

This *Guide* has as its focus the building of strong programs within two-year collegiate institutions through the collaboration of junior colleges with health practitioner associations and community health facilities.

Collaboration is needed to prepare for the addition of a new level of worker to the health care team. The new worker must have a job to do which complements the functions of the other members of the health team. He needs to have pride in his job and feel that being a part of the team is worthwhile. If he does not, he may seek other employment. In this event, the manpower problem is increased since important education and health resources utilized in his training have been wasted. Members of the health team can welcome and give status to a new level of worker if they know how his functions will complement theirs, if they have helped to prepare him to be a member of the team, if they know the strengths and limitations of his educational preparation. This knowledge can be more nearly assured when health practitioner associations and health facilities collaborate in the development of health technology educational programs.

Collaboration is needed to assist two-year colleges in accommodating public health needs. This expansion of college functions is not easily achieved. While it is true that resources are available because the public wants its funds used to develop human resources and to protect the health of the community, the college confronts many problems such as obtaining faculty, building a solid community reputation, meeting the needs of a variety of students with varied aptitudes and aspirations, and meeting accepted educational standards. New health technology programs will add to the college administrator's problems, but the problems will be fewer if he has knowledgeable collaborators to assist him.

To effect cooperative planning, the use of advisory committees is recommended. Some committees are created for specific purposes; others have long-term, general assignments. But whatever the task, an advisory committee exists only to advise; the definition of task and the right of ultimate decision remain with college executives who have responsibility for the total program. Advisory committee structure is related to the college administration's "style of work." The *Guide* suggests one committee structure. Other equally effective patterns could be found.

While serving on advisory committees, a health facility administrator may represent many similar health facilities during planning stages. Ultimately, each clinical center must speak for itself. While national staff of health practitioner associations could not possibly participate on all local advisory committees, the national level must take leadership in promoting educational programs for technicians. To permit the level of participation recommended, new patterns of communication may need to be formed between national organizations and their local members who may serve on advisory committees.

This *Guide* makes the following assumptions:

1. Successful health technology programs can be established only if colleges build firm and continuing relationships with health facilities and health practitioner associations.

2. Full use of the potential of the college to provide health manpower necessitates organization for cooperative action at every stage of program development.

3. The college cannot select and define a role in health technology education unless health facility administrators and health practitioners are able to see their roles in some reciprocal relationship with the junior college.

4. Each institution—the college, the health facility, the health practitioner association—commands resources vital to successful programs; each has a "stake" in educational programs for health manpower.

5. Within a community any one of the institutions has a responsibility for acting as the catalyst to urge action on these programs.

6. The principles stated in the *Guide* may be used in developing educational programs of less than two academic years in length.

7. Programs established with the help of this *Guide* should complement and be coordinated with existing educational programs.

WHO WILL USE THIS *GUIDE?*

College Administrators

The college may be a public or private junior college, a comprehensive community college, a technical institute, or any other educational institution granting associate degrees. The *Guide* uses the term "college" to include all of these institutions. The designated college participants might not all be administrators in the formal sense of the term, but they would have been appointed as the college's administrative force for the purpose of program development. "College administration," when used in the *Guide*, means not only these specially appointed representatives but also the board of trustees, which makes ultimate policy decisions. The role of the college in health technology programs is that of sponsorship, with all of the responsibility for ultimate decision that accompanies any educational program under the institution's jurisdiction.

Health Facility Administrators

The health facility may be a hospital, rehabilitation center, extended care facility, private professional office, clinic, laboratory—any community facility where health professionals and their assistants work. If the facility is to be a satisfactory clinical training center, health facility personnel play a vital collaborative role in every phase of program development.

Health Practitioner Associations

The health practitioner association is a voluntary group of health practitioners organized to promote scientific developments in their field and to protect the public from malpractice. Because the association sets standards for education and practice as qualifications for membership, it is a source of professionalism. It is a source of general career information and documents the interests and the quality concerns of its members. *Guide* references to the health practitioner association are to the national association, unless otherwise stated.

● OVERVIEW OF *GUIDE*

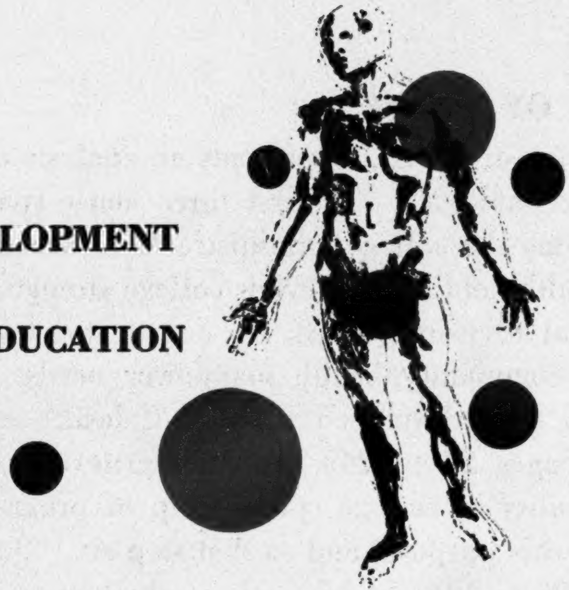
The initial section of the *Guide* presents an analysis of program development in health technologies. The first three steps (pages 10 to 18) are preparatory, helping the college administrator to become more knowledgeable about the health field and to review college strengths in preparation for establishing formal advisory groups. The fourth step (pages 18 to 21) calls for a survey of community health manpower needs. At the end of this step the planners have developed a scale of health manpower priorities. The fifth step (pages 21 to 24) indicates criteria to be utilized in exploring the feasibility of college sponsorship of programs in high-priority health areas. For this purpose, and so that step six, "Securing Program Resources," (pages 25 to 28) can proceed, curriculum essentials and requisite resources will need to be generally defined for each health area under consideration and further refined for areas chosen for development. While the securing of resources is treated as a single step, priority within this step is given to locating faculty who can then participate in the definition of and search for other necessary resources and move into step seven, "The Detailing of Curriculum Development," (pages 28 through 30) long before step six is completed. Step eight, "Evaluation," (pages 30 to 31) is both the final step and the initial step of program development.

Resource assessment, resource recruitment, curriculum development, and evaluation are interdependent and continuous processes, frequently overlapping in time. The separation into a progression of eight steps was made for analytical purposes, not to establish a rigid sequence of program development. The first section of the *Guide* (pages 10 to 34) ends with a checklist of college administrative functions.

The second section of the *Guide* (pages 35 to 41) presents general information about the two-year college—background for health facility administrators and health practitioner association representatives who will work with the college in the development of programs in health technology education. The section ends with two checklists, one for health facilities (pages 39 to 40) and one for health practitioner associations (pages 40 to 41). These checklists enumerate the planning to be done by each institution in support of programs for two-year colleges, as well as summarizing cooperative participation in actual program development with the college.

Section 1

PROGRAM DEVELOPMENT IN HEALTH TECHNOLOGY EDUCATION



Program development is a process—a continuous cycle. The appropriate point of entry into the cycle depends upon the past history of college involvement in the health field. While this section is organized by steps within the process, the designated tasks are often not discrete. Indication of relatedness to other steps is made within the analysis of each task.

STEP ONE: To define the scope of health technology programs.

TASK FORCE: College administration.

The designated task force is made up of college administrators because this step is exploratory and preliminary to cooperative planning; it is a time of orientation during which the administration becomes knowledgeable about the occupational field the college hopes to serve. For this preliminary exploration the administration will draw upon knowledge of the structure of the community, its community and health leaders, and its health resources. On the basis of this knowledge, key health leaders may be selected and approached informally as consultants.

Analysis and background information: Many supporting health occupations have come into existence to provide assistance to health professionals. As professional practice evolved, newly analyzed functions emerged —functions which were defined by the profession.

This can be illustrated in the field of dentistry. Initially, there was realization that increased demands for prevention and control of dental disease could not be met by the dentist practicing alone. In 1949 the Council on Dental Education of the American Dental Association formulated a guide for definition of the functions of the dental hygienist which has been used as a model by the dental practice acts of each state in the licensing of dental hygienists:

> The prime function of the dental hygienist is to assist members of the dental profession in providing oral health care to the public. He may apply his knowledge and skills in the office of the private practitioner, or in formal health educational activities in schools or other agencies. In either instance he can and should perform an important function in health education. The intraoral operation performed by the dental hygienist shall be limited to the natural and restored surfaces of the crowns of the teeth beginning at the epithelial attachment; in no circumstances shall he attempt to treat pathologic involvements of the crowns of the teeth or of the supporting and adjacent tissues.

The term technician has been used traditionally in the physical sciences. Criterion abilities of technicians were defined in a 1962 U.S. Office of Education publication.* The following is an adapted version used in this *Guide* as a frame of reference:

1. Proficiency in applying principles from the physical and biological, social and behavioral sciences which comprise the base for the individual's field of technology
2. A thorough understanding and facility in use of the materials, processes, apparatus, procedures, equipment, methods, and techniques commonly used to perform the specialized services required of the technology
3. The degree of competency and depth of understanding in the field of specialization sufficient to enable the individual to establish effective rapport with the allied professional, and to enable him to perform a variety of detailed work as outlined by general procedures or instructions, but requiring

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* U.S. Department of Health, Education, and Welfare, Office of Education. *Occupational Criteria and Preparatory Curriculum Patterns in Technical Education Programs,* (OE-80015). Washington, D. C.: Government Printing Office, 1962. p. 5.

individual judgment and resourcefulness in the use of techniques, procedures, handbook information, and recorded scientific data

4. Communication skills which include the ability to record, analyze, and transmit facts and ideas in the mode of the specialty; and continuously to locate and master new information necessary to his field of specialization.

The work of the dental hygienist illustrates these competencies:

1. *Applying principles:* In the process of performing the dental prophylaxis function, the need for this service and its value as a preventive measure are discussed with the patient. Discussion of aspects of diet and nutrition as they affect mouth health may also be required. Reasons for replacement of missing teeth may be illustrated. To perform these functions the dental hygienist draws upon principles of anatomy, physiology, histology, and bacteriology; he also uses principles of psychology in arousing patient interest and compliance.

2. *Understanding and facility in use of materials and processes:* To perform the prophylaxis, the dental hygienist has mastered materials, procedures, and pieces of apparatus and is able to improve his techniques as he sees new applications of scientific principles.

3. *Achieving effective rapport with allied professionals:* Dental hygienists are employed in private dental offices, in government service, and in schools. Wherever employed, the dental hygienist performs functions as a member of a dental health team, in a constant exchange of information with allied professionals. In performing the dental prophylaxis and correlated instructional duties, the dental hygienist utilizes judgment and resourcefulness in shaping procedures, selecting information, and recording scientific data. He must work in his specialty in such a way that he maintains the respect of professional affiliates and the patients.

4. *Communication skills:* As the dental hygienist acquaints parents of young children with the value of topical applications of flourides, discusses the action of experimental dentifrices with the dentist, or explains the advantages of roentgenographic examination to patients, communication skills well beyond the high school level and professional knowledge of sources of information are necessary.

Health technology education programs, then, are those curriculums which build the following technician aptitudes in health fields: (1) proficiency in applying principles from the basic sciences to the defined health specialization; (2) thorough understanding and facility in use of materials and techniques of the health specialization; (3) competence and depth of understanding of the specialization sufficient to develop rapport with the allied professional and to use judgment and resourcefulness in performing defined functions; and (4) communication skill on a level of proficiency demanded by the occupation.

As assistance to the college administration in completing this exploratory step, the Appendix (see page 42) contains a listing of many of the health fields which are now utilizing two-year degree-granting colleges to build the above aptitudes. (See *Education for Health Technicians—An Overview* by Robert E. Kinsinger, American Association of Junior Colleges.) There are other fields in which definitions of the functions of technicians are emerging but have not yet been stabilized. If the college chooses to work in these emerging fields, additional time should be allotted for planning with the relevant health practitioner associations.

It should be noted that technical competencies are the expected product of a technical level curriculum. In many career fields allied to medicine, preparation has advanced from apprentice, on-the-job training to a greater degree of formal education with lesser amounts of repetitive experience and from that point it has advanced to a full collegiate program.

STEP TWO: To become generally aware of the operative system of standards in the health field.

TASK FORCE: College administration.

Analysis and background information: Standards within the health occupations are maintained in four ways: (1) through legal regulation of health workers based upon state statutes and state-authorized regulatory boards; (2) through voluntary registries or certifying boards; (3) through a voluntary system of accrediting or approving educational institutions for the conduct of programs in health fields; and (4) through a voluntary system of approving health facilities for the conduct of health care programs.

Legal and voluntary regulation both serve to identify minimum levels of skill and knowledge and to describe minimum limits of ethical conduct in the practice of a profession or in the practice of an allied vocation within a profession. Both types of regulation are instituted to protect public welfare, health, or safety.

Legal regulation through state statutes and state regulatory boards: State statutes (practice acts) regulating health practice are referred to as either mandatory or permissive. *Mandatory* statutes completely prohibit anyone from engaging in a particular activity unless he has obtained a license to practice within a state. Medicine and dentistry are two of the fields covered by such mandatory state statutes. *Permissive* statutes do not prohibit a particular practice; they prohibit the use of certain designations of competency. These designations may be either "licensed" or "registered." For example, a permissive state practice act in physical therapy would prohibit the practitioner from designating himself as a "registered physical therapist" or using the initials "R.P.T." after his name, unless he has been licensed to use this designation by the state regulatory board. Under such a permissive act, the practitioner may practice physical therapy, for example, without approval from the state board as long as he does not hold himself out to the public in any way as being a "registered physical therapist." The title of "registered nurse" is similarly protected in those states with permissive statutes.

Whether the statutes are mandatory or permissive, however, individuals are approved for designated health practice only after they have successfully complied with statutory regulations. Colleges beginning programs in the health field should become familiar with the practice acts in their state which will govern the acceptance of graduates. These statutory regulations often vary from state to state, but the health practitioner can sometimes apply for reciprocity.

Qualification through voluntary registries or certifying boards: Health professions and related allied groups, through their own initiative and aspirations, have established standards of proficiency, developed educational criteria, and created self-policing agencies (boards). Qualifying examinations are given on a national basis by peer groups. Designations which certify competency are made on the basis of successful examination, usually after completion of an approved program of instruction and other stated requirements. "Registered" or "certified" are the usual designations. Each group administering such qualifying examinations seeks to build a reputation for serving the public interest through stringent and well-regulated testing. Continual review of examinations is possible and standards can be adjusted to upgrade performance within a field. The status of the designations which certify competence depends upon the extent to which the registering or certifying group has become known for its insistence upon quality performance.

Colleges beginning programs in health fields should become familiar with standards set by the health professions and allied health groups from which their graduates will seek recognition. Health practitioner associations are listed within Appendix A, with reference to the career areas about which they have information.

Self-regulation through voluntary accreditation: State departments of education or other state agencies approve or accredit colleges and universities. In addition, a system of voluntary, extralegal accreditation exists. Under voluntary accreditation colleges and universities cooperate with each other and with professional organizations in an effort to protect the public by identifying qualified educational institutions and helping to raise and maintain educational standards. Voluntary accreditation attempts to stimulate development and strengthen programs through self-study and interinstitutional study. The required review of organization, program objectives, and staffing has often helped educational institutions to sharpen their goals and to seek methods of instruction which would be increasingly appropriate to those goals.

As has been indicated, voluntary accreditation represents an alliance between colleges and professional organizations. Accrediting groups in the health area establish program standards which they deem necessary to preserve quality patient care. There is recognition, however, that standards need constant reevaluation and that experimental, pilot curriculums are a necessity. While the health practitioner associations engaged in accreditation must ultimately concern themselves with approval of programs, they accept a concomitant responsibility to provide consultation in order to help programs meet standards. Health practitioner associations would prefer to work with colleges in initial program planning stages.

One of the most active professional accrediting organizations in the health field is the American Medical Association working through its Council on Medical Education. As early as 1936, the first essentials of a training program in an allied medical field were formally adopted. The council established voluntary approval procedures and minimal training essentials for educational programs in collaboration with the physician group and the technical or professional personnel concerned. Currently, the American Medical Association accredits training programs in nine allied health areas. This accreditation is given in collaboration with the following:

1. American Association of Inhalation Therapists, American Society of Anesthesiologists, and American College of Chest Physicians
2. American Association of Medical Record Librarians (with defined program essentials also established for medical record technicians)
3. American Society of Radiologic Technologists and American College of Radiology
4. American Society of Medical Technologists and American Society of Clinical Pathologists (with defined program essentials also established for cytotechnologists, and certified laboratory assistants)
5. American Occupational Therapy Association
6. American Physical Therapy Association.

Such items as the following are cooperatively derived: general principles for the organization and administration of programs, essential services and facilities, faculty requirements, and curriculum minimums both for theory and directed practice areas. Graduates from approved programs may then apply to designated voluntary registries for certification.

Important sources of information relating to accrediting agencies for college programs are the National Commission on Accrediting and the U.S. Office of Education.

Regulation through voluntary approval of health facilities: The Joint Commission on Accreditation of Hospitals, for example, is a voluntary organization with the American College of Physicians, the American College of Surgeons, the American Hospital Association, and the American Medical Association as member organizations. The American Association of Homes for the Aging and the American Nursing Home Association are participating organizations.

The commission publishes standards for the accreditation of hospitals and surveys a hospital upon written invitation after the institution has been accepted for registration as a hospital by the American Hospital Association. The Joint Commission also has an active accreditation program for extended care facilities, including nursing homes.

STEP THREE: To review the goals of the college and the impact of adding health technology programs.

TASK FORCE: College administration.

Analysis and background information: This step is an evaluation of present and projected organizational strength of the college. There should be initial consideration of the positive impact of adding health technology programs. American communities today are more health-conscious than ever before, realizing the social cost of illness. Care-deprivation is an area of critical concern which should be recognized by all of the institutions of a community. The college which can effectively meet some of the community's needs for health personnel has a strong claim for increased public support.

There are problems, however, as the resources of the college become strained by new programs. Prime concern should be given to the readiness of the college to teach students who have job-entry goals. Many two-year colleges have concentrated on transfer programs for the student whose goal was the baccalaureate degree. Technical programs must offer the same status, and demand the same rigor, intellectual curiosity, and comprehensiveness as other associate degree programs. If general education courses have not previously served job-entry fields, instructors must have time to rethink course presentations. Prior difficulties in adjusting to varied student goals will be increased by the expansion. Problems of additional sections of general education courses, avoiding isolation of new program entrants, and facility needs should be recognized and weighed against the financial and professional flexibility of the institution.

Generally, the college will want to consider new programs which build upon existing strengths. Assessment should be made of the relative strength of college resources in the biological sciences, the physical sciences, the social-behavioral sciences. While many health-related programs will need to involve all of these, some have more dependence on one than the others. An exception to the principle of building on existing strengths might occur if certain basic health-related science courses have had so few students that academic specialists in these fields have not been warranted. In that instance, additional student enrollments with resultant increase in class sections may permit additional specialist appointments, thereby strengthening the college position in relation to new programs.

DECISION POINT—INTEREST OR LACK OF INTEREST IN DEVELOPING HEALTH TECHNOLOGY PROGRAMS

STEP FOUR: A survey to decide which health technology programs are most needed by the community.

TASK FORCE: General advisory committee with broad representation, including key community leaders and planning commissions, but a concentration of health planners, representatives of health professions, and health facility administrators.

Analysis and background information: At this point the college administration should meet with a selected advisory committee and review the resources of the college. The question to be posed it: "What are the priorities in health manpower needs which college program planners should consider?" In order that the committee may become an information and public relations device, marshaling community support for future college plans, it should be broadly representative of health planning interests in the community. In communities served by multiple junior colleges this step should be a joint venture with all colleges cooperating in the assessment and in advisory committee appointments. The following questions constitute the need survey and should generate necessary data for decision making:

1. What national health manpower needs are evident?

Sources of information:

- a. Bureau of Health Manpower, Public Health Service, Department of Health, Education, and Welfare, 800 North Quincy Street, Arlington, Virginia 22203 (Publication: *An Introduction to Bureau of Health Manpower;* other publications related to specific health technology fields)
- b. National Advisory Commission on Health Manpower (report to be published)
- c. Bureau of Labor Statistics, U.S. Department of Labor (See *Monthly Labor Review,* January 1967, for summary of "Technological Developments and Their Effects Upon Health Manpower" by Herman M. Sturm)
- d. American Dental Association, Bureau of Economic Research and Statistics, manpower studies
- e. Other references (See Appendix C, pages 47-48)

2. Has the region clarified some fields of needed technological assistance? If so, the committee may want to consider establishing pilot programs and seeking financial support and job placements.

Sources of information and assistance:

- a. American Public Health Association (Reprint from *American Journal of Public Health,* December 1966, "Guidelines for Organizing State and Area-Wide Community Health Planning")
- b. Public Health Service regional offices
- c. Hospital associations—local and state
- d. American Medical Association (*Directory of Health Facility Planning Agencies,* 1965, Chicago, Illinois)

e. *The Foundation Directory*, Edition 3, Russell Sage Foundation, New York, 1967, listing some private foundations with strong health interests

f. Western Interstate Commission on Higher Education, Southern Regional Education Board, and New England Board of Higher Education

3. Do local needs follow the trends of national and regional needs?

Sources of information:

a. Hospital associations, nursing home associations, community health planning agencies, or local health practitioner associations which have surveyed the local scene for manpower needs

b. A new local and/or regional survey delegated by the committee (see Appendix D, page 49 for description of one community's extensive survey approach)

4. How are local health manpower needs satisfied by area educational programs?

Sources of information:

a. Placement and work records of graduates from existing health programs in the community

b. Professional and allied health associations which have information concerning programs offered in the area (see Appendix B, pages 43-46 for addresses of associations)

c. State directors of vocational education

d. Reports of any joint planning groups established by junior colleges in the region

5. Are some shortages relatively acute? (Need is often difficult to establish in terms of numbers. Acute shortages are apt to occur in "developing" fields. Some local needs, because of concentration of a particular type of health facility, may be crucial and continuing even though national demands are less acute.)

6. Is it probable that these needs will persist?

Sources of information:

- **a. Committee knowledge of projected changes in health care delivery systems**
- **b. Voluntary associations, such as: American Hospital Association, American Medical Association, American Dental Association, National League for Nursing**
- **c. National Commission on Community Health Services (Commission Reports: *Health Is a Community Affair*, Harvard University Press, 1966; *Health Manpower*, Public Affairs Press, Washington, D.C., 1966)**

7. Is the need for programs which lead to the associate degree, or for shorter-term certificate programs, programs to reorient previously trained career people, continuing education programs, or for some combination of these?

***STEP FIVE:* To evaluate the feasibility of the college developing specific programs.**

***TASK FORCE:* College administration, one or more special advisory committees of health professionals allied to the specialties with greatest manpower needs, health facility administrators employing these specialties, and several members carrying over from the general advisory committee.**

***Analysis and background information:* This step is a consideration of specific program demands. When this step begins, the total field of health technologies has been delimited by establishing a scale of need for specific health technology programs. Each health technology indicated as a high priority field should be described, with functions of the technician delineated. In fields where no such formulation is available the task force will have to allow time for consultation in order to obtain a clear picture of career objectives. On pages 39-41 of the *Guide,* health practitioner association and health facility functions related to this task are enumerated. Each health field with high priority needs should be**

reviewed in the light of the following criteria in order to reach the next decision which is choice of the program(s) for college development.

Criterion One: Are adequate clinical facilities available in the area?

Considerations:

1. Strengths of neighboring health facilities (hospitals, clinics, laboratories) to complement existing college resources

2. Health facility administrator's interest in educational programs and educational goals

Sources of information:

a. Facility administrator's evaluation and review of his facility's capability in handling additional educational responsibilities in the defined specialties

b. Health professional and allied health association assessment of strength of the specialty within neighboring facilities

c. Base line accreditation of hospital or extended care facility by the Joint Commission on Accreditation of Hospitals, 645 North Michigan Avenue, Chicago, Illinois 60611

Criterion Two: Is there good probability that quality criteria within the high priority health specialties can be met?

Considerations:

1. Requirements of state boards of licensure for individuals to practice, if such exist

2. Requirements of accrediting groups whose approval may be sought for the program

Sources of information:

a. National Commission on Accrediting and appropriate regional educational accrediting agency

b. Health professional and allied associations

3. Requirements of certifying or registry groups whose approval the student may seek

Criterion Three: Can a qualified director and teaching staff be obtained for the programs?

Considerations:

1. Designations by health practitioner associations of educational requirements for those directing programs at the associate degree level (the college will frequently need to utilize equivalency provisions to meet accreditation requirements for academic faculty)
2. Salaries and professional opportunities sufficient to attract faculty
3. Availability of faculty; graduates of baccalaureate and higher degree programs in the community with interest in and preparation for associate degree teaching
4. Availability of professionals with teaching interest and teaching skills

Criterion Four: Will students be attracted to these programs?

Considerations:

1. Whether career opportunities will be conducive to attracting students to invest in two years of preparation
2. Whether salaries will be commensurate with the investment in education
3. Whether students will be available in sufficient numbers to permit adequate class size
4. The experience of junior colleges and other institutions providing educational programs in the fields under consideration
5. Scope and future plans of programs already available in the region

   Sources of information:
   a. American Association of Junior Colleges
   b. Secondary school guidance counselors
   c. Health career councils
   d. State departments of education
   e. Health profession and allied health associations at national, state, and local levels

Criterion Five: Is the general cost of the program consonant with college financial resources?

Consideration: Programs needing total support from foundation or government sources should be rejected as unfeasible.

Sources of information:

a. Other colleges

b. Health practitioner associations which have general estimates of basic equipment costs

Criterion Six: Can the college meet the demands which additional students will place upon existing facilities, such as personnel services, physical plant, library holdings, etc.?

Considerations:

1. Probable numbers of students involved in each of the programs being considered
2. Changing ratios of services to new student population
3. Probable delays if physical plant alterations or new physical facilities will be needed to accommodate some of the programs under consideration

Criterion Seven: Would establishment of health technology programs be more feasible if the college sponsored several programs in related health technologies rather than a single program?

Consideration: Possibilities of pooling faculty and resources, building correlated curriculums for related health science areas and spreading resources to improve both economic and personnel feasibility.

Sources of information:

a. Office of Science and Technology, New York State Education Department (Publication: *Technicians for the Health Field: Community College Health Careers Study Program* by Robert Kinsinger and Muriel Ratner, 1966)

b. Curriculum specialists

DECISION POINT—SELECTION OF HEALTH CAREER PROGRAM(S) TO BE DEVELOPED

Report point: The college administrator informs the general and special advisory committees of the decision, supporting rationale, and program objectives; the administrator announces committee members requested to participate in next phase of planning.

STEP SIX: Securing program resources.

TASK FORCE: College administration with previous special advisory committee(s) of health practitioners from the field(s) for which programs are to be developed, representatives of health facilities employing personnel from the selected field(s), augmented by representatives of vocational and professional educational programs, and health technology faculty. This committee remains in operation as a permanent program advisory committee, reporting to the general advisory committee at appropriate intervals.

Analysis and background information: Within this phase the college administration begins to blend the informal team into a formal team. Many resources must be thoroughly investigated. Contractual agreements relating to the educational program are developed. While the administration and the advisory committees will want to proceed as rapidly as possible with the investigation of educational resources, arrangements should not be concluded before the program director, a health professional, is appointed. If possible, even early explorations of possible clinical centers should be made by the program director. Programs have been more successful when the director has been employed in advance of the actual establishment of a program—to plan with the college administration, relevant committees, and health facility representatives.

At this time curriculum considerations must progress to the point of permitting a detailed estimate of faculty, clinical facility, laboratory, and equipment needs. Since curriculum decisions rest upon sound statements of objectives, these must be formulated to the extent possible at this stage of planning.

In this phase, too, the community, the junior college faculty, and the health facility staff must all be prepared for the emergence of the new program.

In searching out program resources, the questions are not neat. Each cooperative team of planners plays a lone hand, moving where it is possible to move, delaying where necessary, but giving attention to the following:

Faculty procurement: Health practitioner associations, individual health professionals in the specialty, and those closely related to the specialty have information about sources of personnel for health-related programs. Private foundations with an interest in the health field frequently are aware of leadership personnel.

Program objectives and projected curriculum: The formulation of program objectives begins with the following base.

1. General education requirements for the associate degree
2. Descriptions of function and role of the technician
3. Minimum preparation recommended by professional and allied health associations
4. Licensure requirements.

Both "2" and "3" may need interpretation from national health practitioner associations; "4," where it exists, will usually be consonant with "3," but stated as product rather than course preparation.

To indicate the range of possibilities, it should be noted that as many as 40 semester credits or as few as 25 semester credits might be directly related to the allied health specialty. Overall credits in programs may vary from 60 to 70 with requirements in, and amount of credit for, laboratory and clinical experience accounting for some of the variation. Other program variations occur in relation to the extent to which courses satisfying general education requirements will also meet professional requirements; this is most apt to be true when specialties are based upon both physical and social sciences.

The above basic elements are combined in such manner that objectives describe the type and degree of competency expected and the general means to be utilized in achieving them. At this stage the curriculum is probably definable only in relative number of hours and general types of clinical, laboratory, and classroom designations.

Sources of information:

1. Specific health practitioner association statements of essentials of accredited schools

2. Vocational and Technical Division, U.S. Office of Education, for bibliography of publications on technical education curriculums

3. American Council on Education, *American Junior Colleges*, seventh edition, for identification of colleges with existing programs

4. American Association of Junior Colleges, *On Using and Being a Consultant; Technical Education in the Junior College*

5. Division of Allied Health Manpower and Division of Health Manpower Services, Bureau of Health Manpower, Public Health Service. Both divisions may be involved with planning, consultation, and assistance on curriculum development.

Facilities for clinical experiences: It is at this stage that it is advisable for the college administrator to enter into a written contract with health facilities for provision of clinical experiences. The contract enunciates areas of shared responsibility and areas of separate responsibility through statements about: (1) the duration of the agreement; (2) those responsible for instructional planning; (3) any consultation commitments necessary; (4) the use to be made of facilities; (5) provisions for special needs of students when in the health facility, e.g., conference space, cafeteria, personal storage space; (6) responsibilities for supervision and instruction; (7) responsibility for equipment damage; (8) definition of "adequate supervision" to protect against implications of negligence; and (9) any provision either party will make to meet special student health requirements of the clinical setting.

These contracts are as crucial as any other made by either institution and legal advisement is necessary in each case.

Sources of information:

1. University of the State of New York, State Education Department, Albany, New York; and American Association of Junior Colleges *(Guide to Selection of Clinical Facilities for an Associate Degree Nursing Program,*

available from both sources; directed to nursing, but the general principles and considerations apply to other health areas)

2. Health facility associations (see Appendix E, pages 50-51, for American Hospital Association statement on "Role and Responsibilities of the Hospital in Providing Clinical Facilities for a Collaborative Educational Program in the Health Field")

On-campus laboratory facilities

Sources of information:

1. Existing science faculty
2. Health practitioner associations (associations frequently list appropriate equipment, especially if extensive monetary investment is expected of the college, as in dental hygiene programs)
3. Special consultants

Orientation of existing health facility personnel and college personnel: This refers to orientation which not only spells acceptance for graduates of the program, but insurance for the acceptance of students and faculty within both educational settings: campus and extended campus in the health facility.

STEP SEVEN: Curriculum development.

TASK FORCE: College administration with permanent program advisory committee.

Analysis and background information: The curriculum is a plan for learning at several levels. One level is the specification of courses (divisions of knowledge and/or skills according to some rational pattern) and the sequencing of these courses in order to produce certain competencies. The connection of course sequences (or programs) with specific competencies leans heavily upon past trials and errors. Thus, technician programs will have a strong resemblance to parts of professional programs if the professional programs precede them in point of time, and if the technicians take over defined functions formerly reserved for the professionals. This level of planning for learning began during the feasibility exploration when consideration was given to the definition of technician functions and to the recommendations for programs suggested by the health practitioner associations.

A second level of curriculum development is the specification of learning experiences or the means of organizing, presenting, using, and testing content within the course sequence of the educational program. This step in program planning concerns the actual development of materials and instructional techniques, and the structuring of learning experiences appropriate to course and program goals. It includes the blending of classroom, laboratory, and clinical teaching. This second level of curriculum development is largely an empirical process. As such, it is subject to constant evaluation and change.

Within the process of developing curriculums for health technology programs, such questions as the following must be temporarily resolved, solutions tested in practice, evaluated, and then frequently faced as recurring issues seeking new solutions:

In what detail should the curriculum be specified?

How much general education and how much technical education is needed? How can general and technical courses best be coordinated?

Have potential conflicts between job-entry demands and junior college general education demands been adequately resolved?

What type and sequence of learning activities are needed to support the objectives of the program and the nature of the content?

How can course goals or competencies be more definitely defined in behavioral terms to permit evaluation?

How can clinical experiences best be coordinated with general education courses and technical courses?

What is the most appropriate spacing of student experiences at the clinical facility?

Can newer technological implementation of instructional methods make teaching increasingly efficient and effective?

How can evaluation measures be sharpened?

What professional development activities can benefit the faculty of health technician programs?

Colleges are increasingly establishing institutional research centers to assist college administration, faculty, and curriculum advisory committees involved in program development and evaluation. As more instructional research is carried out by such centers, better guidelines for curriculum development will be available.

The Bureau of Health Manpower, referred to earlier (page 19), may provide helpful consultation services. Curriculum consultation is also available through the American Association of Junior Colleges' panel of health program consultants.

DECISION POINT: BEGINNING DATE OF PROGRAMS

Factors involved: Progress of faculty planning, delivery date of equipment, classroom-laboratory-clinical readiness, standards of student selection, strategy for student recruitment, plans for student orientation.

Report point: Health technology career information and standards for selection of students are disseminated to secondary school guidance counselors and otherwise publicized within the community served by the college.

PROGRAM IN OPERATION

STEP EIGHT: Program evaluation.

TASK FORCE: College administration with permanent program advisory committee.

Analysis and background information: Program evaluation is continuous in the sense that the frame of reference for evaluation is created as need and feasibility problems are resolved, as resources become operative within the program, and as curriculum development proceeds. The questions asked in any evaluation process reflect the philosophy of the junior college administrators, health practitioners, and health facility administrators who have participated in program development. The following questions are relevant:

Who can evaluate the program product?

Have students performed satisfactorily at the point of job entry?

Have students demonstrated the personal maturity demanded by the occupation?

Is the program producing the competencies designated as program objectives?

What is the employer evaluation of the competencies of program graduates?

Is the program turning out sufficient numbers of qualified health workers?

Have the resources of the junior college, neighboring educational institutions (colleges, universities), other practitioner associations, health facilities, state and federal health agencies, and foundations been utilized to the fullest?

Do recent projections of need justify the limited role the junior college may have imposed upon itself?

Are employers, sufficiently aware of the strength and limitation of technician education, demonstrating this awareness by appropriate assignment of graduates?

Have the numbers of qualified applicants for the program increased?

Has the program been coordinated with other vocational and professional education within the community? Do associate degree graduates show evidence of good working relations with aides and with professionals? Has the program so coordinated its efforts with baccalaureate institutions that students having appropriate abilities are motivated and able to proceed toward the baccalaureate without undue hardship?

Evaluation may indicate a necessary reexamination of the goals of the program, additional work on each level of curriculum development, need for added faculty, added clinical facilities, etc. It is on the basis of evaluation that programs are sharpened and that selected advisory committees may need to be reactivated. This is the challenge of program development: to institute a program which is conceived with sufficient specificity to be evaluated, to develop satisfactory instruments and procedures for evaluation and revision, but to plan well enough to have the ship withstand the shake-down cruise—the initial passage of students through the program. Educational programs are for students. The success of programs will depend upon careful observations of students-in-program, alertness to needs which have not been anticipated, and willingness to make program revisions in response to new knowledge and changing needs.

● REVIEW AND SUMMARY

Tasks of the college sponsoring health technology programs:

1. Enunciate its objectives as a community college with sufficient clarity for health practitioners and health facility administrators to realize the strengths and the problems the college may have in contributing to health technology education

2. Utilize the experience of other college administrators, practitioner groups with experience in planning with college programs, employers, and general educational consultants and health consultants

3. Plan for new or improved health technology programs so that the following educational benefits accrue to students: employment, development of potential for career growth, personal growth, and citizenship contribution

4. Utilize health advisory committees to explore all facets of a problem and advise about probable consequences of decisions, while the college maintains responsibility for educational decisions

5. Supplement knowledge of national needs for health manpower by initiating, in cooperation with health facilities and health practitioner associations, local surveys of need which:

a. Do not duplicate unnecessarily other local or regional studies which may be available

b. Acquaint college administrators with existing educational programs preparing related health personnel

c. Identify possible resources for program development

d. Build awareness of college functioning in response to local needs

e. Assure job opportunities for graduates

f. Give some measure of the sustained demands for manpower

g. Build awareness of appropriate size of programs required to fulfill health manpower needs.

6. Allow time and provide financial support for adequate survey and program planning with health facility administrators, health practitioners, related educational programs in the region, health planning groups, and existing faculty of other programs within the college

7. Become aware of licensure, registration, and accreditation requirements which affect decisions about qualifications of students admitted to programs, curriculum development, faculty needs, and general feasibility of beginning the program

8. Explore the probable cost of programs, availability of faculty, etc., in relation to the feasibility of establishing a specified health technology program

9. Plan for use of area health facilities for clinical experience with consideration being given to: willingness of health facility administration to adopt an educational orientation, adequacy of facility to accommodate educational needs, distance of facility from the campus, transportation availability

10. Enter into a written contract with health facilities for provision of clinical experience—a contract which enunciates areas of shared responsibility and areas of separate responsibility

11. Establish a process for program evaluation when establishing objectives of the program

12. Establish administrative machinery for curriculum development which will integrate new programs with the total philosophy and operation of the college, support the role and image of the college in the community, locate adequate resources for accomplishing objectives, provide for sequential and integrated didactic and clinical teaching, meet job entry requirements, and provide career possibilities

13. Adjust faculty loads, staffing of general education courses, and staffing and space for collegewide services in relation to probable increased service demands created by the addition of students and programs

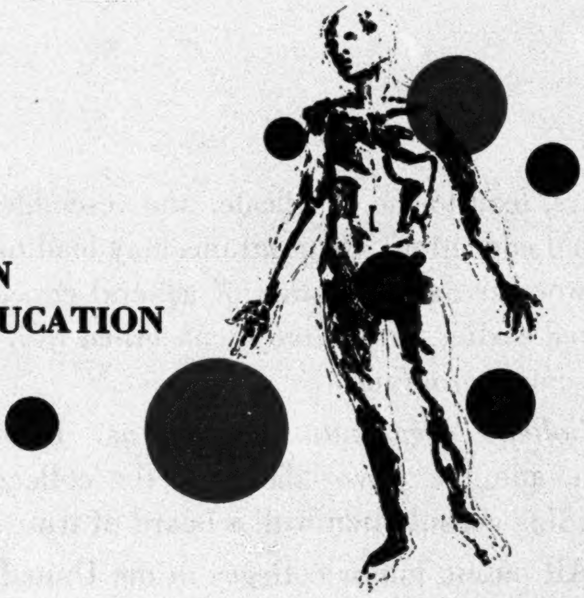
14. Orient existing faculty to accommodate any proposed health technology programs

15. Assist high schools with career guidance concerning health technology programs which their college is currently sponsoring or is developing

16. Initiate planning with community universities and vocational schools for the purpose of increasing articulation of health programs at all educational levels.

Section 2

COLLABORATIVE ROLES IN HEALTH TECHNOLOGY EDUCATION



Full utilization of the potential of two-year, degree-granting institutions to provide health manpower necessitates organization for cooperative action at every stage of program development. The college cannot select and define a role in health technology education unless health facility administrators and health practitioners are able to see their roles in some reciprocal relationship with the college.

What the health facility administrator and the health practitioner should know about the two-year public college

Just as the college administration needed to prepare itself for use of health facility-health practitioner association consultation, so, too, each of the collaborators may find it helpful to be aware of the organization and functions of the college sponsoring health technology programs.

The two-year college is an emerging institution in the sense that it has recently become an accepted social instrument to perform crucial functions within higher education. Two-year colleges are growing rapidly into a network of accessible education beyond high school. They are often designated as comprehensive community colleges and are supported by the state, a special junior college district, or a municipal school system. The name "community college" has been adopted by many of these relatively new colleges to indicate their intention to respond to community educational needs. Accordingly, these colleges have multiple goals: various types of preparation for job entry as well as preparation for further academic work. Some college-sponsored programs may therefore be less than two academic years, lead to the certificate, and resemble the traditional patterns of vocational education. Or programs may lead to an associate degree, representing a two-year amalgamation of general education and technical education. As stated earlier, this *Guide* is concerned with the latter type of associate degree job-entry program.

College organizational patterns: In such things as program initiation, administrative officers of the college may have to delay a decision pending consultation with a board of trustees.

All public junior colleges in the United States operate under some form of state legislative enabling act. In the various states the provisions of the enabling act may determine organizational patterns ranging all the way from centralized control covering operating policies, curriculum, and budget found in varying degrees, in such states as Alabama, Florida, and New York, to local patterns putting emphasis on local control with a minimum of state direction—the local junior college district being the main governmental unit for the junior colleges. Such patterns are found in California, Michigan, Texas, and Missouri. All junior colleges, however, do have a legally defined governing board whose function, authority, and structure is spelled out rather carefully in statutes. Some states have state junior college boards; in others the district or college board is the prime authority.

Student population: Tax-supported comprehensive community colleges have grown in response to the demand for extension of educational opportunity beyond the high school. As a result, many of these colleges are known as "open-door" colleges, welcoming all students who have completed high school requirements. The comprehensive college offers a great diversity of programs to suit the talents and interests of its diversified student population. Admission to the college does not guarantee admission to a particular program of that college. Counseling is offered to help students find programs in which they may succeed. This means that programs within the college may have standards of student admission which are in excess of college admission standards. These are requirements of ability or of specific educational background seen as necessary for success within the program. Again, the college must rely upon health practitioner associations and health facilities for assistance in defining basic aptitudes which may be predictive of program and career success.

Accessibility of colleges: Tax-supported colleges may charge tuition if they are not located in California, the only state which prohibits tuition collection from residents. In addition to tuition, all colleges have fees for use of special equipment and other items. All tax-supported junior colleges charging tuition have minimal rates in comparison with privately endowed colleges. Operating costs of the tax-supported institution are also covered by some state support. While a number of existing two-year colleges are privately endowed, recent growth has been greatest in the number of tax-supported, comprehensive community colleges.

The comprehensive community college has been established to be both geographically and financially accessible to students. Students commute between home and school, evening classes are frequently available, a great range of programs exists to meet student interests and needs. The result is that these colleges have attracted unprecedented numbers of students, some of whom may not otherwise have been able to go to college.

What the health facility administrator and the health practitioner should know about the program of all two-year colleges

Associate degree: The degrees granted by two-year institutions are known as "associate" degrees: titles such as associate in arts, associate in science, associate in applied science, associate in engineering, associate in business administration all represent satisfactory completion of a sequence of courses and a series of requirements. The degree is granted by the college, a privilege awarded to colleges and universities by the states and, in certain cases, by the federal government. Many different patterns of education lead to the same degree.

Regional accreditation: Colleges and universities have, through the device of voluntary regional accreditation, attempted to insure that degree-granting institutions meet certain minimum qualifications. Six regional accrediting groups are currently recognized. (See Appendix F, page 52, for listing of regional groups, with addresses.) Each group has designated a commission which works with junior colleges, senior colleges, and universities. Each higher education commission of the six associations employs its own standards in judging applicants for accreditation and membership, but they have recently agreed on minimal standards which the institution must meet to be eligible for consideration. One such standard relates to curriculum: "The curriculum of an institution of higher education, as here defined, is based upon the liberal arts and sciences. An institution offering specialized post-secondary school education may qualify for membership as an institution of higher education if such a specialty rests upon a base of liberal education required of all or most students."* The degree tradition of the two-year colleges places it solidly within the ranks of higher education; thus degree programs of these colleges must contain a base of general education or liberal arts courses.

General education component of health technology programs: Health technology programs leading to one of the associate degrees must have a significant general education component. The number of courses, designated by each educational institution as fulfilling this general education base, varies from college to college depending upon college philosophy and state requirements for degree-granting institutions. However, all colleges have some such requirements, varying from 18 to 30 semester hours. The requirements usually include work in the fields of English, the social and behavioral sciences, and some in the physical or biological sciences. Health practitioner associations and health facilities need to be aware of this general educational component as they assist the college in thinking through whether this amount of general education beyond high school is "appropriate" for the health career(s) under consideration. In some health career fields the general or liberal arts courses can also serve to meet technical-professional requirements. This has been true in nursing, and may account for some of the success of associate degree nursing programs. Imaginative collaborative planning, particularly with health practitioner associations which are in the process of defining technician-level educational standards, can make for a maximum "fit" of general and technical courses.

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* *Procedures of Regional Associations in Accrediting Institutions of Higher Education.* Washington, D.C.: National Commission on Accrediting, 1966. p. 4.

● CHECKLISTS OF ROLE PERFORMANCE

In any collaborative scheme of program development, it is important to know your role—the things others may expect of you, and the things which your own particular expertise can best contribute to the task.

The following checklists delineate the roles of the health facility administrator and the health practitioner in collaborating with the two-year college.

Tasks of the health facility supporting college health technology programs

1. Use its resources to recruit for the health professions through building awareness of need and potential opportunities for health care personnel

2. In conjunction with college administration, assess the feasibility of use of health facility, physical plant, and personnel for the clinical training of college students in health areas

3. Work with regional planning groups to make projections of facility planning for the next ten to fifteen years, and make data on current and projected staffing needs available to educational planners

4. Orient key personnel to the potential college role in health manpower preparation

5. Assign appropriate personnel to participate with college and health practitioner association personnel in initiating, developing, and evaluating college programs

6. Examine its commitment to education in the context of its commitment to service, recognizing that acceptance of responsibility for education and training also includes an obligation not to use the student to relieve service needs

7. Enter into written contract with the collegiate institution sponsoring the health technology education program

8. Organize and carry out an orientation program for existing personnel of the organization, preparing them (a) to accept students who come to the facility for clinical training, and (b) to accept as co-workers the graduates of college health-related programs

9. Plan, in conjunction with colleges and practitioner associations, steps to report follow-up of health technology graduates hired by the facility upon completion of the educational program

10. Develop, in conjunction with health practitioner associations, illustrative job descriptions and specifications for technical personnel.

Tasks of the health practitioner association supporting college health technology programs

1. Support an orderly development of educational programs, urging that any specific occupational preparation be differentiated from and related to educational programs in complementary occupations

2. Interpret to colleges the association's requirements and expectations for maintenance of quality programs

3. Accept responsibility for a role in the evaluation of college programs related to the association's field and also for assisting sufficiently in program planning and development to assure the success of college programs

4. Periodically restudy its requirements and expectations in order to maintain, in cooperation with colleges, quality health technology programs

5. Aid in publicizing need for faculty personnel for college programs, encourage programs preparing instructors, and assist in locating prepared faculty for health technology programs

6. Encourage local or state unit representatives to participate in college advisory committees and to advise national groups of community plans when they are in initial stages of program development

7. Sponsor and/or conduct research to aid in the discovery of aptitudes and attitudes necessary for occupational roles so that better counseling and better selection of students for college health technology programs can result

8. Engage in study and research to define the competencies of technicians which could contribute to the optimum performance of the professional

9. Develop, in conjunction with related health practitioners, health facility administrators, and college personnel, illustrative job descriptions and specifications for technical personnel

10. In conjunction with related health professionals, health facility administrators, and college personnel, develop material illustrating utilization of staff with different kinds of education for typical areas of service

11. Work toward a standardization of occupational nomenclature in the health field

12. Formulate career and advancement probabilities within the occupational fields, with consideration of education for typical employment demands

13. Urge members to join career councils and contribute to recruiting efforts for all health occupations.

Appendix A

Fields with Existing Associate Degree Job-Entry Programs[1]	Associations Concerned with Program Development
Dental Assisting	American Dental Assistants Association and American Dental Association
Dental Hygiene	American Dental Hygienists Association and American Dental Association
Dental Laboratory Technology	American Dental Association
Environmental Health Technology	National Sanitation Foundation
Food Service Supervision[2]	American Dietetics Association
Inhalation Therapy Technology	American Association of Inhalation Therapists, American Medical Association, American Society of Anesthesiologists, and the American College of Chest Physicians
Medical Laboratory Technology[3]	American Society of Medical Technologists, American Society of Clinical Pathologists, and American Medical Association
Medical Record Technology	American Association of Medical Record Librarians and American Medical Association
Medical Secretarial and/or Assisting	American Association of Medical Assistants
Mental Health Technology	National Commission on Mental Health Careers
Nursing	National League for Nursing and American Nurses Association
Occupational Therapy Assisting	American Occupational Therapy Association
Ophthalmic Dispensing (Opticianry)	American Board of Opticianry, Guild of Prescription Opticians, and Better Vision Institute
Optometric Assisting	American Optometric Association
Prosthetics-Orthotics Technology	American Orthotics and Prosthetics Association
Transfer[4]	

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[1] Since programs are rapidly emerging in selected junior colleges, this list is not intended to be exhaustive. The monthly *Occupational Education Bulletin* of the American Association of Junior Colleges reports on new programs in health fields.

[2] The name sometimes utilized (in P.L. 89-751, for example) is "food service technology."

[3] Graduates of two-year programs may qualify for the designation of "certified laboratory assistants" as per American Society of Clinical Pathologists' standards, or use the two years of work as basis for transfer to hospital programs in cytotechnology. State approvals and licensing of laboratory workers *may* be under other occupational titles and consonant with a two-year educational program in this field.

[4] Two-year colleges now provide preprofessional education in a multiplicity of allied health fields, with programs planned to coordinate with work in four-year institutions. The student receives an associate degree upon completion of two-year program, but has not been prepared for immediate job-entry in a health occupation.

Appendix B

National Health Council Referral List of Source Agencies and Their Career Fields

American Academy of General Practice
Volker Boulevard at Brookside
Kansas City, Missouri 64112
medicine
American Academy of Pediatrics
1801 Hinman Avenue
Evanston, Illinois 60201
pediatrics
American Association for Health, Physical Education and Recreation
1201 Sixteenth Street, N.W.
Washington, D.C. 20036
health education
American Association of Dental Schools
211 East Chicago Avenue
Chicago, Illinois 60611
dentistry
American Association of Inhalation Therapists
332 South Michigan Avenue
Chicago, Illinois 60604
inhalation therapy
American Association of Medical Record Librarians
211 East Chicago Avenue
Chicago, Illinois 60611
medical record library science
medical record technology
American Cancer Society
219 East Forty-Second Street
New York, New York 10017
medical research
medical technology
cytotechnology
American Chemical Society
1155 Sixteenth Street, N.W.
Washington, D.C. 20006
chemistry (health-related)
chemical engineering (health-related)
American College of Hospital Administrators
840 North Lake Shore Drive
Chicago, Illinois 60611
hospital administration
American Dental Assistants Association
211 East Chicago Avenue
Chicago, Illinois 60611
dental assisting
American Dental Association
211 East Chicago Avenue
Chicago, Illinois 60611
dentistry
dental hygiene
dental assisting
dental laboratory technology
American Dental Hygienists Association
211 East Chicago Avenue
Chicago, Illinois 60611
dental hygiene
American Dietetic Association
620 North Michigan Avenue
Chicago, Illinois 60611
dietetics
nutrition
food service supervision
American Heart Association
44 East Twenty-Third Street
New York, New York 10010
medical research
American Home Economics Association
1600 Twentieth Street, N.W.
Washington, D.C. 20009
nutrition
homemaking counseling
American Hospital Association
840 North Lake Shore Drive
Chicago, Illinois 60611
hospital occupations — (especially those not having their own organizations)
American Industrial Hygiene Association
14125 Prevost Street
Detroit, Michigan
industrial hygiene
American Institute of Physics
335 East Forty-Fifth Street
New York, New York 10017
physics (health-related)
American Medical Association
Council on Medical Education
535 North Dearborn Street
Chicago, Illinois 60610
medicine and allied medical fields

American Medical Women's Association
1740 Broadway
New York, New York 10019
medicine

American National Red Cross
Seventeenth and D Streets, N.W.
Washington, D.C. 20006
nursing
hospital social work
hospital recreation
first aid and water safety

American Nurses Association
Department of Nursing Education
A.N.A.-N.L.N. Committee on
Nursing Careers
Department of Nursing Services
10 Columbus Circle
New York, New York 10019
nursing

American Occupational Therapy Association
251 Park Avenue South
New York, New York 10010
occupational therapy

American Optometric Association
7000 Chippewa Street
St. Louis, Missouri 63119
optometry

American Orthoptic Council
4200 North Woodward Avenue
Royal Oak, Michigan 68067
orthoptic technology

American Orthotics and Prosthetics Association
919 Eighteenth Street, N.W.
Washington, D.C. 20006
orthotics
prosthetics

American Osteopathic Association
212 East Ohio Street,
Chicago, Illinois 60611
osteopathy

American Pharmaceutical Association
2215 Constitution Avenue, N.W.
Washington, D.C. 20037
pharmacy (practice and research)

American Physical Therapy Association
1740 Broadway
New York, New York 10019
physical therapy

American Physiological Society
9650 Wisconsin Avenue
Washington, D.C. 20014
physiology

American Podiatry Association
3301 Sixteenth Street, N.W.
Washington, D.C. 20010
podiatry or chiropody
(terms are synonymous)

American Psychiatric Association
1700 Eighteenth Street, N.W.
Washington, D.C. 20009
psychiatry

American Psychological Association
1200 Seventeenth Street, N.W.
psychology (health-related)

American Public Health Association
1740 Broadway
New York, New York 10019
major public health specialties

American Society for Pharmacology and
Experimental Therapeutics, Inc.
9650 Wisconsin Avenue
Washington, D.C. 20014
pharmacology

American Society of Biological Chemists
9650 Wisconsin Avenue
Washington, D.C. 20014
biochemical research

American Society of Civil Engineers
345 East Forty-Seventh Street
New York, New York 10017
sanitary engineering
(as a branch of civil engineering)

American Society of Medical Technologists
Suite 1600, Hermann Professional Building
Houston, Texas 77025
medical technology

American Society of Radiological Technologists
537 South Main Street
Fond du Lac, Wisconsin 54935
x-ray technology

American Society of Safety Engineers
5 North Wabash Avenue
Chicago, Illinois 60602
safety engineering

American Speech and Hearing Association
9030 Old Georgetown Road
Washington, D.C. 20014
speech specialist
hearing specialist

American Veterinary Medical Association
600 South Michigan Avenue
Chicago, Illinois 60605
veterinary medicine
(practice and research)

Association of American Medical Colleges
2530 Ridge Avenue
Evanston, Illinois 60201
medicine

Association of Medical Illustrators
535 North Dearborn Street
Chicago, Illinois 60610
medical illustration

Institute of Food Technologists
176 West Adams Street
Chicago, Illinois 60603
food technology

Medical Library Association
919 North Michigan Avenue
Chicago, Illinois 60611
medical librarianship

National Association for Mental Health
10 Columbus Circle
New York, New York 10019
psychiatry
clinical psychology
psychiatric aide
psychiatric social work
psychiatric nursing
occupational therapy
recreational specialist

National Association for Retarded Children
420 Lexington Avenue
New York, New York 10017
special education
vocational rehabilitation
social work
nursing
residential care services

National Association of Sanitarians
Lincoln Building, Room 208
1550 Lincoln Street
Denver, Colorado 80203
environmental health

National Association of Social Workers
2 Park Avenue
New York, New York 10016
social work

National Committee for Careers in
Medical Technology
1501 New Hampshire Avenue, N.W.
Washington, D.C. 20036
medical technology
cytotechnology
laboratory assisting

National League for Nursing
Division of Nursing Education
10 Columbus Circle
New York, New York 10019
nursing
baccalaureate program
diploma program
associate degree program
practical nursing program

National Medical Association
520 W Street, N.W.
Washington, D.C. 20001
medicine

National Society for Crippled Children
and Adults
2023 West Ogden Street,
Chicago, Illinois 60612
occupational therapy
physical therapy
rehabilitation counseling
speech and hearing therapy
special education

National Tuberculosis Association
1740 Broadway
New York, New York 10019
voluntary agency administration
and specialties
public health education

Registry of Medical Technologists of A.S.C.P.
Muncie, Indiana 47301
medical technology
cytotechnology

Society of Public Health Educators
104 East Twenty-Fifth Street
New York, New York 10010
public health education

United Cerebral Palsy Association
321 West Forty-Fourth Street
New York, New York 10036
rehabilitation
(medical and allied fields)
special education
speech therapy

U.S. Atomic Energy Commission[1]
Division of Technical Information Extension
Educational Materials Section
P.O. Box 62
Oak Ridge, Tennessee 37830
health-related nuclear science
atomic medicine

U.S. Food and Drug Administration[2]
Washington, D.C. 20201
health-related biological and physical sciences

U.S. Office of Education[2]
Health Occupational Section
Division of Vocational and Technical Education
Washington, D.C. 20202
vocational and technical education opportunities in health careers

U.S. Public Health Service[2]
Public Inquiries Branch
Office of Information
Washington, D.C. 20201
public health specialties in nearly all health professions and health-related sciences
research specialties involving the health professions and health sciences

U.S. Vocational Rehabilitation Administration[2]
Department of Health, Education and Welfare
Washington, D.C. 20210
rehabilitation counseling and related specialties

Additional Sources

BIBLIOGRAPHIES AND SOURCE LISTS—These lists cover a wide range of professional and scientific careers in many fields and provide invaluable guides as additional resources to the above list.

American Association for the Advancement of Science
1515 Massachusetts Avenue, N.W.
Washington, D.C. 20005
Careers in Sciences: A Selected Bibliography for High School Science Students. Price 50 cents (Single copy free to educators upon receipt of an official request).

U.S. Bureau of Labor Statistics[1]
Department of Labor
Washington, D.C. 20210
Occupational Outlook Report Series[3]: This series of 101 career pamphlets—many of them dealing with professional, scientific, and supporting occupations in the health field—provides, in brief usable form, career data from the widely known *Occupational Outlook Handbook*.

U.S. Employment Service[1]
Department of Labor
Washington, D.C. 20210
Health Careers Guidebook, 2nd Edition: This document is used primarily by schools and counselors. Information about local area health career prospects may be available at the local employment office of your state employment service.

INFORMATION ON HEALTH CAREERS IN GOVERNMENT—Many government agencies can provide information on career opportunities within their own staff. The U.S. Civil Service Commission has as its field of interest career and employment opportunities at all levels throughout the entire government including careers in the health professions and health-related sciences; examples would include the Veterans Administration and the National Aeronautics and Space Administration as well as those listed above. For similar information from the Armed Forces, write to Health and Medical, Department of Defense or to one of the individual services. Address: Washington, D.C.

The health career information available from such agencies as the U.S. Atomic Energy Commission and the U.S. Public Health Service is not limited to government.

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[1] An agency of the federal government.

[2] A constituent unit of the Department of Health, Education, and Welfare.

[3] Price and order forms available from:
Superintendent of Documents
Washington, D.C. 20402

Appendix C

Bibliography on Health Manpower

American Hospital Association. *Manpower Resources in Hospitals—1966.* Chicago: the Association, 1966.

Louis W. and Maud Hill Family Foundation. *Health Manpower for the Upper Midwest.* St. Paul: the Foundation, June 1966. A study of the needs for physicians and dentists in Minnesota, North Dakota, South Dakota, and Montana.

U.S. Department of Health, Education, and Welfare, National Center for Health Statistics. *Health Resources Statistics, 1965.* Washingon, D.C.: Government Printing Office. (P.H.S. Publication No. 1509).

U.S. Department of Labor. *Training Health Service Workers: The Critical Challenge.* Proceedings of the Department of Labor - Department of Health, Education, and Welfare Conference on Job Development and Training for Workers in Health Services. Washington, D.C.: Government Printing Office, 1966.

U.S. Department of Labor. *Occupational Outlook Handbook,* 1966-67 Edition. Washington, D.C.: Government Printing Office. (Bulletin No. 1450).

U.S. Department of Health, Education, and Welfare. *Organizing Comprehensive State Health Careers Councils.* Washington, D.C.: Government Printing Office, November 1966. Developed at a workshop for state health careers councils by the National Health Council under grants from the U.S. Public Health Service and U.S. Vocational Rehabilitation Administration.

U.S. Department of Health, Education, and Welfare. *Report of the Workshop for State Health Careers Councils and Committees.* Washington, D.C.: Government Printing Office, March 1966.

U.S. Department of Health, Education, and Welfare. "Manpower in the 1960's." *Health Manpower Source Book.* Washington, D.C.: Government Printing Office, 1964. (P.H.S. Publication No. 263).

U.S. Department of Labor, *Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization, and Training.* Washington, D.C.: Government Printing Office, March 1966.

U.S. Department of Health, Education, and Welfare, Office of the Assistant Secretary for Program Coordination. *Job Development and Training for Workers in Health Services.* Washington, D.C.: Government Printing Office, August 1966.

University of Illinois, College of Medicine, Center for the Study of Medical Education. *Continuing Education for the Health Professions—Report of an Interprofessional Task Force.* Chicago: University of Illinois Press, December 1966.

Appendix D

St. Louis Junior College
Study of Local Need
Submitted by Harry Davis

Need, on a national basis, has been demonstrated in almost all health technology programs. The specific needs of any particular community, however, vary from the national need, and must be determined for the area served by the junior college.

The result of any need or market survey is likely to indicate rather severe shortages in many jobs. One will find that to establish quantitative values for each of these areas of need is extremely difficult, and may be misleading in that the numbers will change from day to day. For this reason we were satisfied to establish our need in most cases as a general indicator, and allowed our capacity for training to dictate the numbers of potential students in the program.

While there are many methods to determine needs in any particular community, the following is a brief outline of one method.

1. A group of persons influential in the field of hospital administration, medical practice, and medical education were selected as a top level advisory committee. The objectives of the study and the proposed methods for arriving at the answers were discussed with this committee. Their approval and cooperation were solicited.

2. A series of general interviews, primarily with hospitals, was accomplished. These interviews were designed to gain a general overview of the total gamut of needs in the medical community and to acquaint the employers with the objectives of the study and the college.

3. From the information gained from these interviews additional interviews were scheduled in specific areas. These specific interviews were designed to determine the increments involved in the performance of each job, the various levels of jobs in the area, the rates of compensation, existing training programs, and student selection criteria. To the extent possible, these interviews were conducted with direct supervision and incumbents.

4. Concurrent with number three, literature reviews were inaugurated to discover what work had been done and was being done elsewhere, licensing and registering requirements, if any, and curriculums offered in other educational institutions.

5. For those areas where the jobs were not concentrated in relatively few establishments but disseminated over a wide area of the community, other means of survey were inaugurated—primarily mailed questionnaires. Example: The field of radiologic technology was surveyed through several interviews in each of ten hospitals; on the other hand, the field of dental hygiene was surveyed by mailed questionnaires to 900-plus individual dental offices. In every case where a mailed questionnaire survey was used the questionnaire was supplemented by interviews with key personnel from the field.

From the resulting mass of information detailed reports were prepared for each of eighteen different job areas. These reports contained a job description, registry and licensing requirements, education and experience requirements, student selection criteria, data for the establishment of educational facilities and an expression of the need for clinical affiliation, expected pay ranges for the graduate and an indication of the number of graduates who could be marketed. These reports were studied and analyzed from a viewpoint of establishing a priority of program development.

Many program resources were discovered during the investigative portion of the study described above.

From the foregoing investigative study and its results tentative decisions were made to develop programs in several areas. The number of programs selected was based almost completely upon the ability of the college to develop these programs within a given period of time.

Appendix E

Statement on Role and Responsibilities of the Hospital in Providing Clinical Facilities for a Collaborative Educational Program in the Health Field*

A hospital governing body is legally and morally responsible to the patient, the community, and the sponsoring organization for conduct of the hospital. In exercising its responsibilities, the governing body determines the specific purposes and goals of the institution. Therefore, the governing body decides whether or not these goals and purposes shall include the use of the hospital's facilities and services for formalized educational purposes.

Preliminary Considerations

Before entering into cooperative arrangements with another institution for an educational program, the governing body of a hospital has the responsibility to assess the value and appropriateness of the proposed program in terms of social and community needs. By permitting the use of the hospital as a clinical field for an educational program under college or other educational auspices, the hospital governing body in effect is giving evidence to the public that in its judgment the program is worthy of public approval and support.

Prior to making a decision on whether or not to make clinical facilities available for educational purposes, hospital authorities have the responsibility to:

1. Review the philosophy underlying the other institution's objectives, its consequent goals, and the broad educational policies established to achieve these goals. On these matters the hospital must be in basic agreement with the school, since it will share the responsibility for ensuring an educational program of acceptable standards.
2. Appraise the other institution's capabilities and resources to determine whether they are such as to ensure the satisfactory conduct of the program.

Relationships

Collaboration with another institution in an educational program implies a relationship in which both institutions constantly seek to improve and strengthen the program. The hospital has the responsibility of promoting acceptance of the program by the hospital's professional and administrative staffs and fostering coordinated relationships between the school and the various departments of the hospital concerned with the program. To accomplish this, the hospital and the school must agree upon an organizational plan that provides for coordination of activities and a system of communication whereby information, recommendations, policy interpretations, evaluation, and plans for development may be exchanged readily. In view of the hospital's responsibility for the quality of patient care, the hospital shares in the management of the program to the extent of planning for the use of facilities. The hospital must continue to have complete control over the care of the patients.

Resources

Since the purpose of the hospital's participation in the educational program is to provide a field for clinical learning and practice, the hospital is responsible for the creation of a suitable environment in which the practice can take place. It is the hospital's responsibility to assure clinical resources, physical facilities, and supportive services appropriate to the program.

Contracts and Agreements

If the hospital is to collaborate in the educational program with another institution, a formal contract or agreement should be established between the hospital and the other institution. As the official representative of the governing body, the chief executive officer of the hospital is responsible for the due execution of the contract or agreement and for its implementation by the hospital.

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* Approved, Board of Trustees, American Hospital Association, May 8-10, 1967.

In addition to defining its legal responsibilities, the hospital must safeguard the quality of patient care provided in the hospital.

The terms of the contract should include:

- Beginning and terminal dates of the contract and methods for renewal and for termination
- Bases for program evaluation
- Specific obligations the hospital will assume in providing physical facilities, such as classrooms, laboratories, library facilities, offices, conference rooms, and, when indicated, student dressing and locker room space; equipment and supplies; financing; health care for students; hours and services available for clinical experiences; dining privileges, etc.
- Specific obligations the school will assume in the hospital in providing faculty; in supervision of students; in following administrative channels in planning for student clinical experience or observations; in adhering to hospital policies and standards; in financing, etc.
- Role and responsibility of the director of the hospital department connected with the particular program, in planning and providing opportunities for clinical experience. Because the hospital is responsible for the care rendered to patients, the authority of the director of the department must be safeguarded.
- Conditions for research consistent with hospital policies governing all research in the hospital.

Evaluation

By the very fact that it permits another educational institution to use its facilities, the hospital gives assurance to the public and to the students that it has appraised and endorsed the quality of the overall educational program. For this reason, the hospital shares with the school the responsibility for continuing evaluation of the program in terms of qualifications and competence of faculty teaching in the hospital, achievement of purposes and goals, approval by appropriate authorities, and future planning and development.

Appendix F

Regional Accrediting Agencies for Colleges

Middle States Association of Colleges and Secondary Schools
Commission on Institutions of Higher Education
225 Broadway
New York, New York 10007

New England Association of Colleges and Secondary Schools
Institutions of Higher Education
50 Beacon Street
Boston, Massachusetts 02108

North Central Association of Colleges and Secondary Schools
Commission on Colleges and Universities
5454 South Shore Drive
Chicago, Illinois 60615

Northwest Association of Secondary and Higher Schools
M-302 Miller Hall
University of Washington
Seattle, Washington 98105

Southern Association of Colleges and Schools
Commission on Colleges and Universities
795 Peachtree Street, N.E.
Atlanta, Georgia 30308

Western Association of Schools and Colleges
Accrediting Commission for Senior Colleges and Universities
c/o Mills College
Oakland, California 95350

Western Association of Schools and Colleges
Accrediting Commission for Junior Colleges
Modesto Junior College
Modesto, California 95350